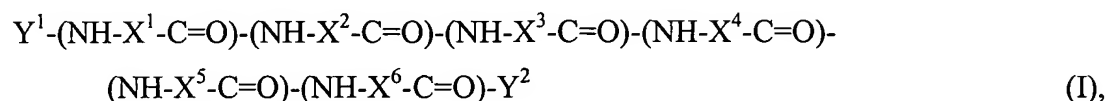


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A compound of formula (I)



wherein Y^1 is either

- a) a hydrogen or
- b) a methyl group or
- c) an acetyl group or
- d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein $(NH-X^1-C=O)$ is a basic amino acid residue, preferably

- a) L-arginine or
- b) D-arginine or
- c) L-lysine or
- d) D-lysine or
- e) L-ornithine or
- f) D-ornithine,

wherein $(NH-X^2-C=O)$ is a cyclic, nonpolar amino acid, preferably

- a) L-cyclohexylalanine or
- b) D-cyclohexylalanine or
- c) L-cyclohexylglycine or
- d) D-cyclohexylglycine,

wherein $(NH-X^3-C=O)$ is any arbitrary D- or L-amino acid, preferably

- a) L-norleucine or
- b) D-norleucine or

- c) L-leucine or
- d) D-leucine or
- e) L-isoleucine or
- f) D-isoleucine or
- g) L-cyclohexylalanine or
- h) D-cyclohexylalanine or
- i) L-cyclohexylglycine or
- j) D-cyclohexylglycine or
- k) L-proline or
- l) D-proline or
- m) L-aspartic acid or
- n) D-aspartic acid or
- o) L-glutamic acid or
- p) D-glutamic acid,

wherein $(\text{NH}-\text{X}^4-\text{C}=\text{O})$ is a cyclic amino acid, preferably

- a) L-cyclohexylalanine or
- b) D-cyclohexylalanine or
- c) L-cyclohexylglycine or
- d) D-cyclohexylglycine or
- e) L-tyrosine or
- f) D-tyrosine or
- g) L-phenylalanine or
- h) D-phenylalanine,

wherein $(\text{NH}-\text{X}^5-\text{C}=\text{O})$ is an amino acid with a polar side chain, preferably

- a) L-glutamine or
- b) D-glutamine or
- c) L-ornithine or
- d) D-ornithine or
- e) L-glutamic acid or
- f) D-glutamic acid or

- g) L-arginine or
- h) D-arginine or
- i) L-lysine or
- j) D-lysine or
- k) L-asparagine or
- l) D-asparagine or
- m) L-aspartic acid or
- n) D-aspartic acid or
- o) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^6-\text{C}=\text{O})$ is any arbitrary D- or L-amino acid, preferably

- a) L-arginine or
- b) D-arginine or
- c) is replaced by a chemical bond,

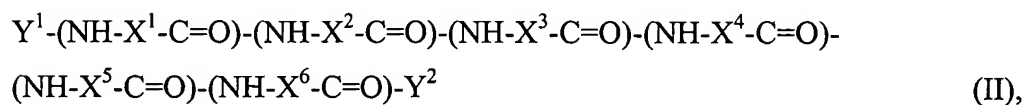
wherein Y^2 is either

- a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
- b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or
- c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or
- d) 7-amido-4-methylcoumarin (combined through the carboxylic acid group) or
- e) para-nitroanilide (combined through the carboxylic acid group) or
- f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by no fewer than one amino acid, and pharmaceutically acceptable salts thereof.

2.- 16. (Canceled).

17. (Withdrawn) A medication, comprising one or more compounds according to claim 1 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.
18. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 1.
19. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals, which method comprises administering an effective amount of a compound according to claim 1.
20. - 22. (Canceled).
23. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 1.
24. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 1 and a pharmaceutically acceptable carrier.
25. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 1.
26. (Withdrawn) A compound of formula (II)



wherein Y^1 is either

- a) a hydrogen or
- b) a methyl group or

c) an acetyl group or
d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,
wherein $(\text{NH}-\text{X}^1-\text{C}=\text{O})$ is a D- or L-amino acid, preferably

- a) valine or
- b) alanine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) aspartic acid or
- g) glutamic acid or
- h) serine or
- i) threonine or
- j) tyrosine or
- k) arginine or
- l) lysine or
- m) ornithine or

n) is replaced by a chemical bond,
wherein $(\text{NH}-\text{X}^2-\text{C}=\text{O})$ is a D- or L-amino acid, preferably

- a) alanine or
- b) valine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) serine or
- g) threonine or
- h) tyrosine or
- i) proline or
- j) citrulline or
- k) arginine or
- l) lysine or

- m) ornithine or
- n) cyclohexylalanine or
- o) cyclohexylglycine or
- p) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^3-\text{C}=\text{O})$ is any arbitrary amino acid, preferably

- a) L-cyclohexylalanine or
- b) D-cyclohexylalanine or
- c) L-cyclohexylglycine or
- d) D-cyclohexylglycine,

wherein $(\text{NH}-\text{X}^4-\text{C}=\text{O})$ is a small amino acid, preferably

- a) L-proline or
- b) D-proline or
- c) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^5-\text{C}=\text{O})$ is any arbitrary amino acid, preferably

- a) L-tyrosine or
- b) D-tyrosine or
- c) L-phenylalanine or
- d) D-phenylalanine or
- e) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^6-\text{C}=\text{O})$ is an amino acid with a basic side chain, preferably

- a) L-arginine or
- b) D-arginine or
- c) L-lysine or
- d) D-lysine or
- e) L-ornithine or
- f) D-ornithine,

wherein Y^2 is either

- a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
- b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or

- c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or
 - d) 7-amido-4-methylcoumarin (combined through the carboxylic acid group) or
 - e) para-nitroanilide (combined through the carboxylic acid group) or
 - f) is replaced by a connecting chain containing 1 to 35 atoms,
- or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

27. - 49. (Canceled).

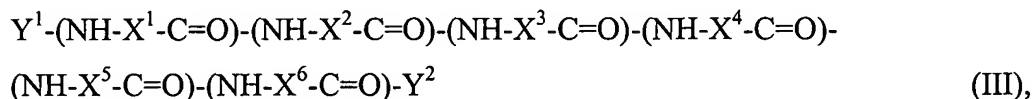
- 50. (Withdrawn) A medication, comprising one or more compounds according to claim 26 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.
- 51. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 26.
- 52. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals which method comprises administering an effective amount of a compound according to claim 26.

53. - 55. (Canceled).

- 56. (Withdrawn) A method for thrombin inhibition in humans and animals, which comprises an effective amount of a compound according to claim 26.
- 57. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 26 and a pharmaceutically acceptable carrier.

58. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 26.

59. (Withdrawn) A compound of formula (III)



wherein Y^1 is either

- a) a hydrogen or
- b) a methyl group or
- c) an acetyl group or
- d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein $(NH-X^1-C=O)$ is a D- or L-amino acid, preferably

- a) valine or
- b) alanine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) asparagine or
- g) glutamine or
- h) serine or
- i) threonine or
- j) tyrosine or
- k) arginine or
- l) lysine or
- m) ornithine or
- n) is replaced by a chemical bond,

wherein $(NH-X^2-C=O)$ is a D- or L-amino acid, preferably

- a) alanine or

- b) valine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) serine or
- g) threonine or
- h) tyrosine or
- i) proline or
- j) citrulline or
- k) arginine or
- l) lysine or
- m) ornithine or
- n) histidine or
- o) glutamic acid or
- p) aspartic acid or
- q) tryptophan or
- r) cyclohexylalanine or
- s) cyclohexylglycine or
- t) is replaced by a chemical bond,

wherein (NH-X³-C=O) is any arbitrary amino acid, preferably

- a) L-cyclohexylalanine or
- b) D-cyclohexylalanine or
- c) L-cyclohexylglycine or
- d) D-cyclohexylglycine,

wherein (NH-X⁴-C=O) is a small amino acid, preferably

- a) L-proline or
- b) D-proline or
- c) is replaced by a chemical bond,

wherein (NH-X⁵-C=O) is any arbitrary amino acid, preferably

- a) L-tyrosine or

- b) D-tyrosine or
- c) L-phenylalanine or
- d) D-phenylalanine or
- e) is replaced by a chemical bond,

wherein (NH-X⁶-C=O) is an amino acid with a basic side chain, preferably

- a) L-arginine or
- b) D-arginine or
- c) L-lysine or
- d) D-lysine or
- e) L-ornithine or
- f) D-ornithine,

wherein Y² is either

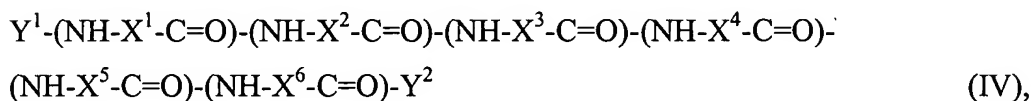
- a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
- b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or
- c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or
- d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or
- e) para-nitroanilide (combined through the carboxylic acid group) or
- f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

60. - 81. (Canceled).

82. (Withdrawn) A medication comprising one or more compounds according to claim 59 a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

83. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 59.
84. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in humans and animals which method comprises an effective amount of a compound according to claim 59.
85. - 87. (Canceled).
88. (Withdrawn) A method for thrombin inhibition in humans and animals, which method comprises administering an effective amount of a compound according to claim 59.
89. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 59 and a pharmaceutically acceptable carrier.
90. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 59.
91. (Currently amended) A compound of formula (IV)



wherein Y^1 is either

- a) a hydrogen or
 - b) a methyl group or
 - c) an acetyl group or
 - d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,
- wherein $(NH-X^1-C=O)$ is a D- or L-amino acid, preferably
- a) —valine or

~~b) alanine or~~

~~c) leucine or~~

~~d) isoleucine or~~

~~e) norleucine or~~

~~f) asparagine or~~

~~g) glutamine or~~

~~h) serine or~~

~~i) threonine or~~

~~j) tyrosine or~~

~~k) arginine or~~

~~l) lysine or~~

~~m) ornithine or~~

~~n) is replaced by a chemical bond,~~

wherein $(\text{NH}-\text{X}^2-\text{C}=\text{O})$ is a D- or L-amino acid, preferably

~~a) alanine or~~

~~b) valine or~~

~~c) leucine or~~

~~d) isoleucine or~~

~~e) norleucine or~~

~~f) serine or~~

~~g) threonine or~~

~~h) tyrosine or~~

~~i) proline or~~

~~j) citrulline or~~

~~k) arginine or~~

~~l) lysine or~~

~~m) ornithine or~~

~~n) histidine or~~

~~o) glutamic acid or~~

~~p) aspartic acid or~~

- ~~q) tryptophan or~~
- ~~r) cyclohexylalanine or~~
- ~~s) cyclohexylglycine or~~
- t) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^3-\text{C}=\text{O})$ is any arbitrary amino acid, preferably selected from the group consisting of

- a) L-cyclohexylalanine, ~~or~~
- b) D-cyclohexylalanine, ~~or~~
- c) L-cyclohexylglycine, and ~~or~~
- d) D-cyclohexylglycine,

wherein $(\text{NH}-\text{X}^4-\text{C}=\text{O})$ is an small amino acid, preferably

- ~~a) L proline or~~
- ~~b) D proline or~~
- ~~c) L azetidine 2 carboxylic acid or~~
- ~~d) D azetidine 2 carboxylic acid,~~

wherein $(\text{NH}-\text{X}^5-\text{C}=\text{O})$ is an aromatic amino acid, preferably

- ~~a) L tyrosine or~~
- ~~b) D tyrosine or~~
- ~~c) L phenylalanine or~~
- ~~d) D phenylalanine,~~

wherein $(\text{NH}-\text{X}^6-\text{C}=\text{O})$ is an amino acid with a basic side chain, preferably

- ~~a) L arginine or~~
- ~~b) D arginine or~~
- ~~c) L lysine or~~
- ~~d) D lysine or~~
- ~~e) L ornithine or~~
- ~~f) D ornithine or~~
- ~~g) L homoarginine or~~
- h) ~~D homoarginine,~~

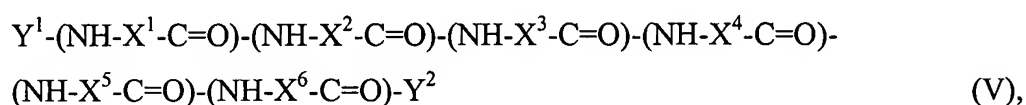
wherein Y^2 is either

- a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
- b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or
- c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or
- d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or
- e) para-nitroanilide (combined through the carboxylic acid group) or
- f) is replaced by a connecting chain containing 1 to 35 atoms,
or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

92. - 116. (Canceled).

117. (Currently amended) A medication, comprising the pharmaceutical composition according to claim 124 ~~one or more compounds according to claim 91~~ and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.
118. (Original) A diagnostic composition, comprising one or more compounds according to claim 91.
119. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation, in humans and animals which method comprises administering an effective amount of a compound according to claim 91.
120. - 122. (Canceled).
123. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 91.

124. (Original) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 91 and a pharmaceutically acceptable carrier.
125. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 91.
126. (Withdrawn) A compound of formula (V)



wherein Y^1 is either

- a) a hydrogen or
- b) a methyl group or
- c) an acetyl group or
- d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein $\text{(NH-X}^1\text{-C=O)}$ is a D- or L-amino acid, preferably

- a) valine or
- b) alanine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) asparagine or
- g) glutamine or
- h) serine or
- i) threonine or
- j) tyrosine or
- k) arginine or
- l) lysine or
- m) ornithine or

- n) phenylalanine or
- o) dichlorophenylalanine or
- p) tetrahydronorharman-3-carboxylic acid or
- q) 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid or
- r) 4-phenylpiperidine-4-carboxylic acid or
- s) thienylalanine or
- t) phenylglycine or
- u) p-nitrophenylalanine or
- v) is replaced by a chemical bond,

wherein $(\text{NH}-\text{X}^2-\text{C}=\text{O})$ is a D- or L-amino acid, preferably

- a) alanine or
- b) valine or
- c) leucine or
- d) isoleucine or
- e) norleucine or
- f) serine or
- g) threonine or
- h) tyrosine or
- i) proline or
- j) citrulline or
- k) arginine or
- l) lysine or
- m) ornithine or
- n) histidine or
- o) glutamic acid or
- p) aspartic acid or
- q) tryptophan or
- r) cyclohexylalanine or
- s) cyclohexylglycine or
- t) is replaced by a chemical bond,

wherein (NH-X³-C=O) is any arbitrary amino acid, preferably

- a) L-cyclohexylalanine or
- b) D-cyclohexylalanine or
- c) L-cyclohexylglycine or
- d) D-cyclohexylglycine,

wherein (NH-X⁴-C=O) is a small amino acid, preferably

- a) L-proline or
- b) D-proline or
- c) L-azetidine-2-carboxylic acid or
- d) D-azetidine-2-carboxylic acid,

wherein (NH-X⁵-C=O) is an aromatic amino acid, preferably

- a) L-tyrosine or
- b) D-tyrosine or
- c) L-phenylalanine or
- d) D-phenylalanine,

wherein (NH-X⁶-C=O) is an amino acid with a basic side chain, preferably

- a) L-arginine or
- b) D-arginine or
- c) L-lysine or
- d) D-lysine or
- e) L-ornithine or
- f) D-ornithine or
- g) L-homoarginine or
- h) D-homoarginine,

wherein Y² is either

- a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
- b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or
- c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or

- d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or
- e) para-nitroanilide (combined through the carboxylic acid group) or
- f) is replaced by a connecting chain containing 1 to 35 atoms,
or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

127. - 162. (Canceled).

163. (Withdrawn) A medication, comprising one or more compounds according to claim 126 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

164. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 126.

165. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals, which method comprises administering an effective amount of a compound according to claim 126.

166.-168. (Canceled).

169. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 126.

170. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 126 and a pharmaceutically acceptable carrier.

171. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 126.

172. (New) The compound of claim 91, wherein (NH-X¹-C=O) is a substituent selected from the group consisting of:
- a) valine,
 - b) alanine,
 - c) leucine,
 - d) isoleucine,
 - e) norleucine,
 - f) asparagines,
 - g) glutamine,
 - h) serine,
 - i) threonine,
 - j) tyrosine,
 - k) arginine,
 - l) lysine,
 - m) ornithine, and
 - n) replaced by a chemical bond.
173. (New) The compound of claim 91, wherein (NH-X²-C=O) is a substituent selected from the group consisting of:
- a) alanine,
 - b) valine,
 - c) leucine,
 - d) isoleucine,
 - e) norleucine,
 - f) serine,
 - g) threonine,
 - h) tyrosine,
 - i) praline,
 - j) citrulline,
 - k) arginine,

- l) lysine,
- m) ornithine,
- n) histidine,
- o) glutamic acid,
- p) aspartic acid,
- q) tryptophan,
- r) cyclohexylalanine,
- s) cyclohexylglycine, and
- t) replaced by a chemical bond.

174. (New) The compound of claim 91, wherein (NH-X⁴-C=O) is an amino acid selected from the group consisting of:

- a) L-proline,
- b) D-proline,
- c) L-azetidine-2-carboxylic acid, and
- d) D-azetidine-2-carboxylic acid.

175. (New) The compound of claim 91, wherein (NH-X⁵-C=O) is an amino acid selected from the group consisting of:

- a) L-tyrosine,
- b) D-tyrosine,
- c) L-phenylalanine, and
- d) D-phenylalanine.

176. (New) The compound of claim 91, wherein (NH-X⁶-C=O) is an amino acid selected from the group consisting of:

- a) L-arginine,
- b) D-arginine,
- c) L-lysine,
- d) D-lysine,

- e) L-ornithine,
- f) D-ornithine,
- g) L-homoarginine, and
- h) D-homoarginine.